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AS-CONSTRUCTED RECORDS: CREATING SOMETHING USEFUL

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RH2 Engineering, Inc.

PRESENTER HISTORY



Donald G. Popoff P.E.

Project Manager for RH2 Engineering
East Wenatchee Office
Employed with RH2 for 11 years
Previous Public Works Director

- Mechanical Engineer
- Certified Water Rights Examiner in WA State
- Water Conservancy Board Commissioner, Douglas County
- Small Systems Chair for PNWS – AWWA
- EYB Board Member

Spent the last 11 years designing and providing construction inspection of infrastructure projects including pipelines, roads, sewer, water, and storm systems.



HOW OFTEN DO YOU USE AS-BUILTS?



- Developer's extensions
- Leaks/Emergencies
- Utility locates
- System upgrades
- New service requests

Could be more often than you think.

WHO IN OFFICE USES AS-BUILTS?

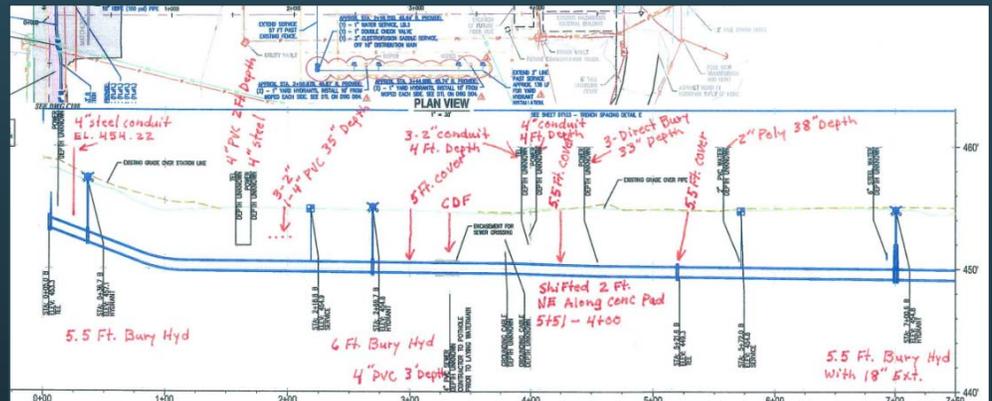


- Front counter staff
- Crews in field
- Engineering
- Technicians
- Billing questions
- Every once in a while Managers

TYPICAL AS-BUILT PROCESS

1. Pay item in specs for contractor to provide marked-up as-builts
2. Contractor provides junk. (Maybe they provide PDF's marked up – electronic junk)
3. As-built documents get shelved – pulled out when needed.

D4.5	10-inch PVC Pipe Installation	L.F.	1,860	\$	14.90	\$	27,714.00		
D4.6	12-inch PVC Pipe Installation	L.F.	2,620	\$	15.60	\$	40,872.00		
D4.7	18-inch PVC Pipe Installation	L.F.	780	\$	17.90	\$	13,962.00		
D5.1	Rock Excavation	L.F.	9,200	\$	12.00	\$	110,400.00		
D5.2	Rock Excavation Materials	L.F.	9,200	\$	10.00	\$	92,000.00		
D6	Imported Trench Backfill	C.Y.	2,800	\$	7.90	\$	20,540.00		
D7	Dewatering and Channel Crossings	L.S.	1	\$	6,000.00	\$	6,000.00		
D8	Trench Safety and Shoring	L.S.	1	\$	2,100.00	\$	2,100.00		
D9	Additional Miscellaneous Materials	L.S.	1	\$	11,700.00	\$	11,700.00		
D10	Railroad Crossing	Each	2	\$	9,660.00	\$	19,320.00		
D11	State Highway Crossing	Each	0	\$	11,700.00	\$	0.00		
D12.1	Blowoff Assembly	Each	2	\$	1,040.00	\$	2,080.00		
D12.2	Blowoff Assembly Materials (See CO#1 / CPR #6)	Each	2	\$	600.00	\$	1,200.00		
D13.1	Air Release and Vacuum Assembly	Each	4	\$	3,130.00	\$	12,520.00		
D13.2	Air Relief and Vacuum Assembly Materials (See CO#1 / CPR #6)	Each	4	\$	600.00	\$	2,400.00		
D14	Evaluating Existing System - Potholing	Each	4	\$	330.00	\$	1,320.00		
D15	Evaluating Existing System - Pressure Testing	Each	4	\$	2,900.00	\$	11,600.00		
D16	Evaluating Existing System - Video Inspections	L.F.	2,300	\$	1.40	\$	3,220.00		
D17	Force Account	F.A.	1	\$	50,000.00	\$	50,000.00		
D18	As-builts	L.S.	1	\$	10,000.00	\$	10,000.00		
Contract at Award Schedule D							\$	688,840.00	
Sales Tax Schedule D (Materials with Receipts)							8.30%	\$	8,972.30



Red line from decent contractor



TYPICAL USE

A question will come-up what was installed / how / when / do you remember? Pull out the as-builts ...wait....first try and find the as-builts...then try to find location of improvements on a station line that is far removed.... where on the design plans we are talking about.

- Start going through pictures in file of 1000 pictures looking for that one picture that you remember ...needle in haystack.



MAKING AS-BUILTS MORE USEFUL

- We overlay design in usable map.
- We create objects in the map – links so you can retrieve information about an item.
- Link information to the object.
- Powerful tool - we link construction photos to the design.



SCENARIOS

Best way to illustrate what we are doing – show you directly.



SCENARIOS

Line Break on Saturday night.

Crew is dispatched – can't find a valve.



SCENARIOS

Someone comes to the front counter and asks where their service line is?



SCENARIOS

Developer wants to add an extension to a line –
have your initial meeting?



COST

On projects that we design:

Typical Range

- \$25,000 to \$100,000 – Really depends on the project and what levels of connectivity you want.
- Just line work and features
- Link construction pictures
- Link As-built drawings
- Link submittal records



QUESTIONS

Just another platform to maintain?

- Once you have it – living and breathing.
- Do nothing to it – you have a useable as-built.
- Update it if you want.

Can our own staff work on it?

- Sure – we help you get started with our projects
- Give you the basemap/connect the information.
- Do as much or as little as you want.
- We have clients that are sending us their updates marked up – we make modifications, then push out a new release. The release is easy.



QUESTIONS

How big is the file for storage?

- Flash drive will hold most projects.

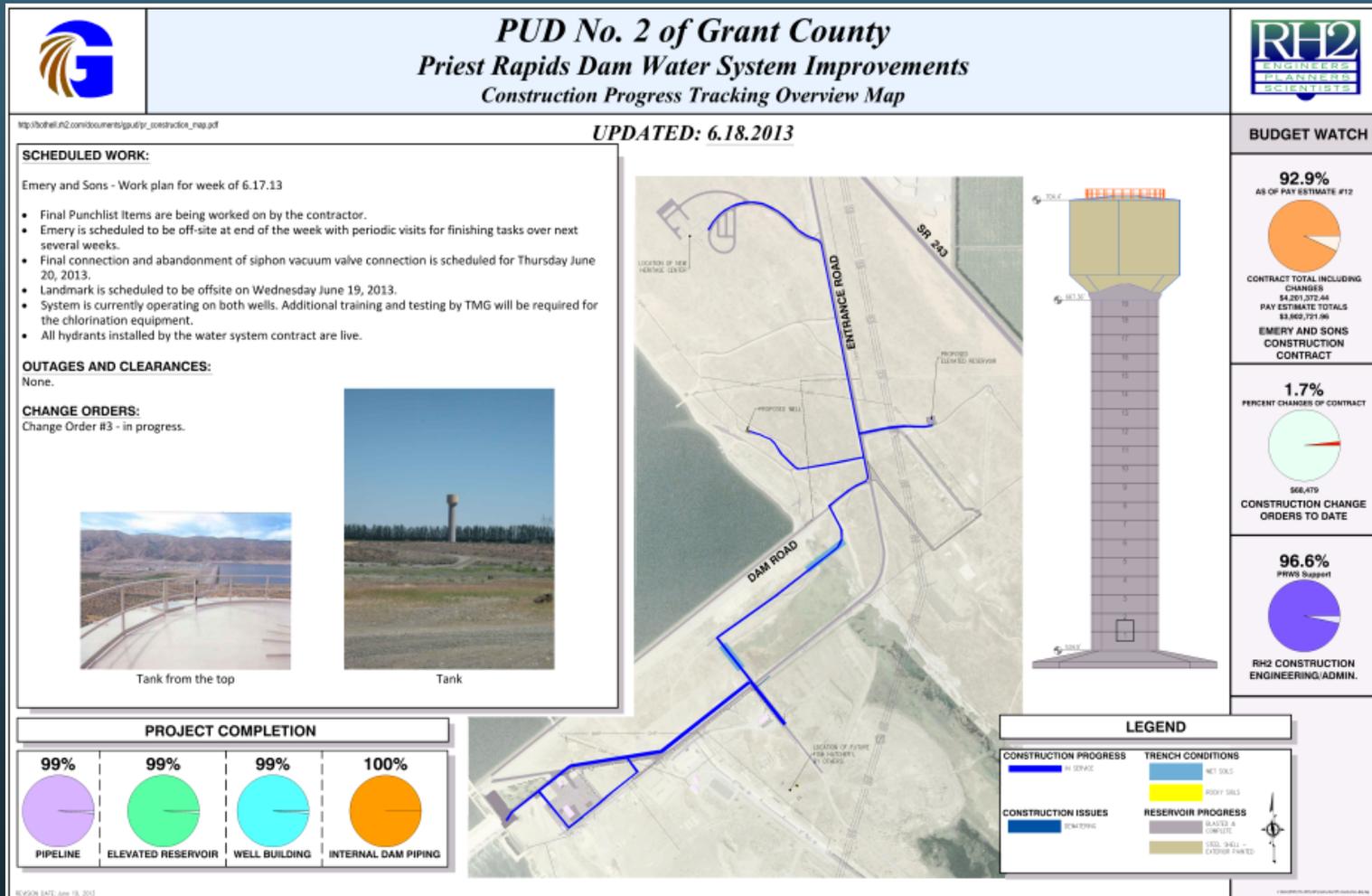
Is the map out on the internet?

- No the map is not posted.



OTHER CONSTRUCTION TOOLS

Weekly Snapshots



OTHER CONSTRUCTION TOOLS

- Web Cam – live linked into Client's webpage.
<http://rh2cam1.thinkfirefly.com/>
- Post project updates to our webpage.
[Progress Report](#)



CONSTRUCTION

- Rock Excavation in Eastern Washington
- Change Order
- Contractor's Bad Day

